

REMARKS/ARGUMENTS

Claims 1-4 are pending.

Claims 1 and 3 have been amended to more particularly point out the invention. Applicants have also updated the continuing application data paragraph. No new matter has been introduced.

Applicants submit herewith terminal disclaimers to overcome the double-patenting rejections.

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nelson (5,770,029) in view of Wilding (5,928,880) and Murphy (5,374,522).

Applicants respectfully request reconsideration of this rejection in view of the following arguments.

Claims 1 and 2

Applicants respectfully submit that independent claim 1 is patentable over Nelson, Wilding, and Murphy for several reasons. First, it would not have been obvious or desirable to one skilled in the art to try to combine the device of Nelson, which as the Examiner acknowledges lacks a lysing chamber altogether, with the ultrasound bath and beads lysis technique taught by Murphy. Murphy discloses that cells may be lysed by placing them in a container with beads and then submerging the container in an ultrasound bath. One problem with this technique is that the distribution of ultrasonic energy in the bath is seldom uniform, so that a technician must locate a high energy area within the bath and place the container into that area. Thus, in order to combine the teachings of Nelson and Murphy, one skilled in the art would have had to provide the device of Nelson with a lysing chamber (which it does not have), place beads in the lysing chamber, and then submerge the device in an ultrasonic bath, while hoping that the lysing chamber portion of the device ends up located in a high energy area of the bath. Also, provisions for sealing the device would have to be made so that the bath water would not rush into the ports of the device

while it is submerged in water. Accordingly, Applicants believe it would not have been obvious or desirable to one skilled in the art to try to combine the teachings of Murphy with the device of Nelson.

Second, even if one did try to combine the teachings, the proposed combination of Nelson and Murphy would still not show all of the features of Applicants' device as recited in claim 1. For instance, the proposed combination would not have at least one membrane or filter positioned in the lysing chamber for capturing the sample components to be lysed as the sample flows through the chamber. Applicants' device provides important advantages such as the concentration of cells to be lysed on the membrane or filter along with highly effective lysis of the captured cells with an ultrasonic transducer coupled to the lysing chamber wall. The Wilding reference fails to remedy the shortcomings of the proposed combination of Nelson and Murphy.

For at least the foregoing reasons, independent claim 1 and claim 2 depending therefrom are patentable.

Claims 3 and 4

First, as discussed in detail above with regard to claims 1 and 2, Applicants respectfully submit it would not have been obvious or desirable to one skilled in the art to try to combine the teachings of Murphy with the device of Nelson.

Second, even if one did try to combine the teachings, the proposed combination of Nelson and Murphy would still not show all of the features of Applicants' device as recited in independent claim 3. For instance, the proposed combination would not have at least one solid phase in the lysing chamber for capturing the sample components to be lysed as the sample flows through the chamber, and the combination would not have the lysing chamber being defined by at least one wall having an external surface to which the ultrasonic transducer may be coupled, the wall comprising a plastic film having a thickness in the range of 0.01 to 0.5 mm. Applicants' device of claim 3 provides important advantages, such as the concentration of cells to be lysed on the solid phase along with highly effective lysis of the captured cells with an ultrasonic

transducer coupled to the lysing chamber wall. The Wilding reference fails to remedy the shortcomings of the proposed combination of Nelson and Murphy.

For at least the foregoing reasons, independent claim 3 and claim 4 depending therefrom are patentable.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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